

Notice of Allowability

Application No.	Applicant(s)	
09/90,264	SUGIURA ET AL.	
Examiner	Art Unit	
Angela J. Martin	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/25/04.
2. ☒ The allowed claim(s) is/are 1-17.
3. ☒ The drawings filed on 23 November 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 5/17/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Election/Restrictions

1. Claims 14-17 are directed to an allowable product. Pursuant to the procedures set forth in the Official Gazette notice dated March 26, 1996 (1184 O.G. 86), claims 14-17, directed to the process of making or using the patentable product, previously withdrawn from consideration as a result of a restriction requirement, are now subject to being rejoined. Claims 14-17 hereby rejoined and fully examined for patentability under 37 CFR 1.104. Claims 18-39, not directed to the process of making or using the patentable product, will not be rejoined.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Robert Pous on May 17, 2004.

Please cancel non-elected claims 18-39.

In claim 14, line 9, please insert the word -- predetermined -- before the word: basic.

REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance:

The Applicant claims a fuel cell output characteristic estimating apparatus for estimating an output characteristic of a fuel cell, comprising a current-voltage detector that detects an output current of the fuel cell and a voltage between terminals of the fuel cell; and a controller that estimates the output characteristic of the fuel cell on the basis of the detected output current and the detected voltage between the terminals, detected by the current-voltage detector, and a predetermined basic output characteristic of the fuel cell.

Applicant claims a fuel cell system having a fuel cell, the fuel cell system further comprising a fuel cell output characteristic estimating apparatus for estimating an output characteristic of the fuel cell, including a current-voltage detector that detects an output current of the fuel cell and a voltage between terminals of the fuel cell, and a controller that estimates the output characteristic of the fuel cell on the basis of the detected output current and the detected voltage between the terminals, detected by the current-voltage detector, and a predetermined basic output characteristic of the fuel cell; sets a target output of the fuel cell using the output characteristic of the fuel cell estimated by the controller; and adjusts an output of the fuel cell such that the set target output is generated by the fuel cell.

The Applicant claims a vehicle comprising the above described fuel cell system.

In the prior art of record, Freeman, U.S. Pat. No. 6,519,539, discloses a fuel cell system, which measures the voltage and current outputs of the fuel cell in order to calculate the fuel cell impedance.

However, fuel cell impedance is not an output characteristic of the fuel cell. Further, there is no suggestion that in a fuel cell output characteristic estimating apparatus, the controller derives the basic output characteristic from at least one of a fuel supply pressure and a temperature of the fuel cell. Thus, the controller derives the basic output characteristic from an output characteristic of the fuel cell corresponding to, at least one of the fuel supply pressure, the temperature of the fuel cell, and an internal resistance of the fuel cell corresponding to the temperature of the fuel cell, which results in a more efficient estimation of the output characteristic of the fuel cell.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJM


Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700